Exercise 1

Let h be a function defined by $h(x) = 5\tan(x)$. Which of the following definitions of f and g satisfy $\left(\frac{f}{g}\right)(x) = h(x)$?

Multiple Choice:

(a) $f(x) = 5\sin(x)$ *and* $g(x) = 5\cos(x)$

(b) $f(x) = \sin(x)$ *and* $g(x) = \cos(x)$

(c) $f(x) = \sin(x)$ *and* $g(x) = \dfrac{\cos(x)}{5}$ ✓

(d) $f(x) = 5\sin(x)$ *and* $g(x) = \dfrac{1}{5\cos(x)}$

Let h be a function defined by $h(x) = 2\tan(x)$. Which of the following definitions of f and g satisfy $(f \cdot g)(x) = h(x)$?

Multiple Choice:

(a) $f(x) = \tan(x)$ *and* $g(x) = 2\cos(x)$

(b) $f(x) = 2\sin(x)$ *and* $g(x) = \dfrac{1}{\cos(x)}$ ✓

(c) $f(x) = \cos(x)$ *and* $g(x) = 2\sin(x)$

(d) $f(x) = \dfrac{2}{\sin(x)}$ *and* $g(x) = \cos(x)$

Let h be a function defined by $h(x) = \sin(x)\tan(x)$. Which of the following definitions of f and g satisfy $(f \cdot g)(x) = h(x)$?

Multiple Choice:

(a) $f(x) = (\sin(x))^2$ *and* $g(x) = \cos(x)$

(b) $f(x) = \sin(x)$ *and* $g(x) = \dfrac{1}{\cos(x)}$

(c) $f(x) = (\sin(x))^2$ *and* $g(x) = \dfrac{1}{\cos(x)}$ ✓

(d) $f(x) = \cos(x)$ *and* $g(x) = \left(\dfrac{1}{\sin(x)}\right)^2$